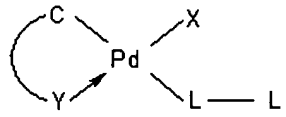
IN THE CLAIMS

Please amend the claims, without prejudice, as follows:

1-92. (Cancelled)

93. A cyclopalladated compound, which is an *organometallic* compound comprising palladium, a Sigma C - Pd bond and a coordination bond Y → Pd, originating an organic cycle with formula corresponding to the structures below:

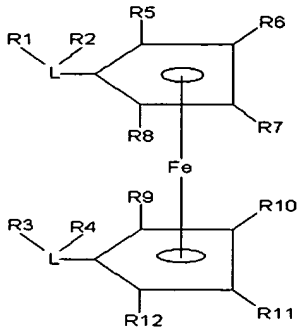


wherein:

- X represents an element chosen from the following groups: halogen (Cl, F, Br, I); pseudo-halogen (N_3, NCO, NCS, SCN); or acetate (H_3C-COO^-); and
- Y represents an element from the group V or VI of the Periodic Table, e. g. N, P, As, Sb, Bi, O, S, Se, Te;
- C represents an atom of carbon with sp^2 or sp^3 hybridization, covalently bonded to the atom of palladium; the ring containing C, Y and D can be constituted of three to eight atoms;
- between C and Y, represented by a curved line, there is a succession of atoms designated as cyclopalladated ring, constituted of three to eight atoms, including the atom of palladium; typically, not excluding any other way, said atoms are chosen from carbon, nitrogen, oxygen or sulphur; each one of these atoms constituting the ring can, on the other hand, be linked to other atoms or groupings, forming variable structures external to the ring, linear or cyclic, for which no specific limitations are known by the Applicant;
- L represents a coordinated ligand which is a donating atom from group V of the Periodic Table (N, P, As, Sb, Bi) within a bis-diphenylphosphine-ferrocene compound as detailed by Scheme 2 below, with the schematic representation L-L indicating the

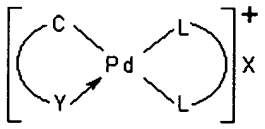
presence of two linkers L within the structure of said bis-diphenylphosphine-ferrocene compound, while R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11 and R12 represent individually the following radicals, which can be present in any order: hydrogen (H), alkyl, aryl, dienyl, alkoxy, siloxy, hydroxy (OH), amine (-NH2), imide, halogen (F, Cl, Br, I), imine, nitro (-NO2);

SCHEME 2



or one of its pharmaceutically acceptable salts or adducts.

94. A cyclopalladated compound, which is an *organometallic* compound comprising palladium, a Sigma C - Pd bond and a coordination bond Y → Pd, originating an organic cycle with formula corresponding to the structure below:



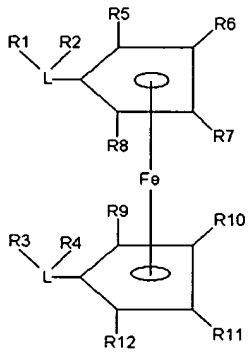
wherein:

- X represents an element chosen from the following groups: halogen (Cl, F, Br, I); pseudo-halogen (N_3, NCO, NCS, SCN); or acetate (H_3C-COO^-); and
- Y represents a Nitrogen (N) atom of any isomer of the ligand N,N-dimethyl-1-phenethylamine (triethylamine) or of the alkynes pyridinyl-phenyl-ethyne or 1-phenyl-3-N,N-dimethylamine-propyne showed in the schemes 4A and 4B;
- C represents an atom of carbon in *ortho* position of the aromatic ring of the ligand

N,N-dimethyl-1-phenethylamine (triethylamine) with sp^2 hybridization and covalently bonded to the atom of palladium. C represents yet a carbon atom of the ligands pyridinyl-phenyl-ethyne or 1-phenyl-3-N,N-dimethylamine-propyne show and marked in schemes 4A or 4B;

- L represents a coordinated ligand which is a donating atom from group V of the Periodic Table (N, P, As, Sb, Bi) within a bis-diphenylphosphine-ferrocene compound as detailed by Scheme 2 below, with the schematic representation L-L indicating the presence of two linkers L within the structure of said bis-diphenylphosphine-ferrocene compound, while R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11 and R12 represent individually the following radicals, which can be present in any order: hydrogen (H), alkyl, aryl, dienyl, alkoxy, siloxy, hydroxy (OH), amine (-NH2), imide, halogen (F, Cl, Br, I), imine, nitro (-NO2);

SCHEME 2



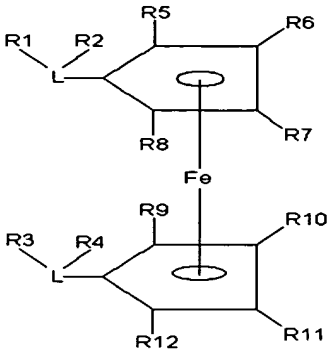
or one of its pharmaceutically acceptable salts or adducts.

95. A cyclopalladated compound, which is an *organometallic* compound comprising palladium, a Sigma C - Pd bond and a coordination bond Y → Pd, originating an organic cycle with formula corresponding to the structures below:

wherein:

- X represents an element chosen from the following groups: halogen (Cl, F, Br, I); pseudo-halogen (N_3, NCO, NCS, SCN); or acetate (H_3C-COO^-); and
- Y represents a Nitrogen (N) atom of any isomer of the ligand N,N-dimethyl-1-phenethylamine (triethylamine) or of the alkynes pyridinyl-phenyl-ethyne or 1-phenyl-3-N,N-dimethylamine-propine show in the schemes 4A and 4B;
- C represents an atom of carbon in *ortho* position of the aromatic ring of the ligand N,N-dimethyl-1-phenethylamine (triethylamine) with sp^2 hybridization and covalently bonded to the atom of palladium. C represents yet a carbon atom of the ligands pyridinyl-phenyl-ethyne or 1-phenyl-3-N,N-dimethylamine-propyne showed and marked in schemes 4A or 4B;
- L represents a coordinated ligand which is a donating atom from group V of the Periodic Table (N, P, As, Sb, Bi) within a bis-diphenylphosphine-ferrocene compound as detailed by Scheme 2 below, with the schematic representation L-L indicating the presence of two linkers L within the structure of said bis-diphenylphosphine-ferrocene compound, while R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11 and R12 represent individually the following radicals, which can be present in any order: hydrogen (H), alkyl, aryl, dienyl, alkoxy, siloxy, hydroxy (OH), amine (-NH2), imide, halogen (F, Cl, Br, I), imine, nitro (-NO2);

SCHEME 2



or one of its pharmaceutically acceptable salts or adducts.

96. The cyclopalladated compound of claim 93, which is selected from the group consisting of N,N-dimethyl-1-phenethylamine (dmpa) and derivatives of the *alkynes* pyridinyl-phenyl-*ethyne* or 1-phenyl-3-N,N-dimethylamine-*propyne* or one of its pharmaceutically acceptable salts or adducts, containing any other biphosphinic ligand.

97. The compound of claim 93, wherein the compound inhibits the activity of proteins linked to disorders or diseases.

98. The compound of claim 97, wherein the protein is an enzyme.

99. The compound of claim 98, wherein the enzyme comprises enzymes selected from the group consisting of cysteine-protease, serine peptidase and metallo-protease families.

100. The compound of claim 99, wherein the cysteine-proteases are selected from the group consisting of Cathepsins B, H, J, L, N, S, T and C (dipeptidyl-peptidase-I), Interleukine Converter Enzyme (ICE), neutral proteases activated by calcium, Calpaine I and II, endopeptidases, viral cysteine-proteases, such as cardiovirus

endopeptidase, adenovirus endopeptidase and aphthovirus endopeptidase, and essential proteases for the life cycle of parasites such as proteases from *Plasmodium*, *Entamoebas*, *Onchoceras*, *Leishmanias*, *Haemonchus*, *Dictyostelium*, *Therilerium*, *Schistosoma* and *Tripanosoma* species.

101. The compound of claim 100, wherein the enzyme is selected from the group consisting of Cahtepsin B, Cruzaine and Interleukine-1β Converter Enzyme.

102. The compound of claim 99, wherein serino-peptidases are selected from the group consisting of dipeptidyl-peptidase IV, acylaminacyl-peptidase and oligopeptidase B prolyl-oligopeptidase and Cathepsin D.

103. The compound of claim 102, wherein the enzyme is Cathepsin D.

104. The compound of claim 99, wherein metallo-proteases are selected from the group consisting of angiotensin converting enzyme, collagenases, stromelisines, membrane type metallo-protease and genatinases.

105. The compound of claim 93, wherein the compound is used to treat disorders and diseases linked to proteins and enzymes.

106. The compound of claim 105, wherein the diseases comprise diseases caused by tissue degradation such as arthritis, muscle distrophy, tumor invasion, glomerulonephrithis, bone infections by parasites, parasitomies, periodontal diseases and tumor metastasis; heart diseases involving the degradation of atrial natriuretic factor; inflammatory diseases, such as e. g. bronchitis, arthritis rheumatoid, osteoporosis, acute pancreatitis and cancer progressions; disorders such as amnesia, control of depression and blood pressure; diabetes, trypanosomiasis, Chagas disease,

food disorders, bullimia nervosa and anorexia; alcoholism, diseases related to the production of cytokines and cytokine receptors, such as interleukine-6 (IL-6), tumor necrosis factor alpha (TNF-alpha), interferon-gamma (INFN-gamma), IL-1 antatonist receptor (IL-1 RA), IL-10 and growth stimulation factor for granulocyte-macrophage colonies (GM-CSF), psychological stress, combat against infections caused by HIV virus (AIDS); inflammatory diseases of the Central Nervous System causing mieline degradation, including Multiple Sclerosis and autoimmune Encephalomielitis; cancer tumors, autoimmune diseases, tumors comprising breast, marrow, adenomas, thyroid, melanoma, gastric, bowel, gullet and thyroid tumors and neuroblastomas.

107. The compound of claim 106, wherein the diseases are ascitic or solid tumors, particularly breast, marrow, adenomas, thyroid, gastric, bowel, gullet, thyroid tumors and neuroblastomas.

108. The compound of claim 93, wherein the compound inhibits young bone marrow cells from entering cell division (S stage).

109. The compound of claim 93, wherein the compound is antiangiogenic.

110. The compound of claim 93, wherein the compound is antimetastatic.

111. The compound of claim 93, wherein the compound is useful to complement radio therapy treatments.

112. The compound of claim 93, wherein the compound interacts with DNA.

113. The compound of claim 93, wherein the compound is an immunomodulator.

114. A composition comprising at least one compound of claim 93 or one of its pharmaceutically acceptable salts or adducts.

115. The composition of claim 114, wherein the composition comprises about 0.001 to 99% of the full weight of the composition of the compound or one of its salts or adducts, and at least one pharmaceutically acceptable carrier.

116. The composition of claim 114, wherein the composition comprises about 0.01 to 70% of the full weight of the composition of the compound or one of its salts or adducts, and at least one pharmaceutically acceptable carrier.

117. The composition of claim 114, wherein the composition comprises about 0.1 to 40% of the full weight of the composition of the compound or one of its salts or adducts, and at least one pharmaceutically acceptable carrier.

118. The composition of claim 114, wherein the composition additionally comprises a solvent.

119. The composition of claim 118, wherein the solvent is DMSO.

120. The composition of claim 114, wherein the composition is presented in solid dosage forms, such as capsules, tablets or powders, or in liquid dosage forms, such as elixirs, syrups, emulsions, solutions, suspensions, mixtures and infusions.

121. The composition of claim 120, wherein the formulations are scheduled or delayed release.

122. The composition of claim 120, wherein the composition is administered by means comprising oral, subcutaneous, intravenous, intranasal, transdermal, intraperitoneal, topic, intramuscular, intralung, vaginal, rectal, intraocular or sublingual means, systems to supply liposomes.

123. The composition of claim 122, wherein the composition is administered by injectable means, particularly intraperitoneal.

124. The composition of claim 123, wherein the composition comprises particularly water, saline solution and/or phosphate buffer pH 7.4 and between 0.1 and 30% DMSO, more particularly 1 to 10% by weight of the composition and stabilizing or preservative agents, if required.

125. The composition of claim 114, comprising about 0.0001 to 250 mg, more particularly about 0.1 to 100 mg of at the least one compound or one of its pharmaceutically acceptable salts or adducts.

126. The composition of claim 114, wherein the composition inhibits the activity of proteins linked to disturbances or diseases.

127. The composition of claim 126, wherein the protein is an enzyme.

128. The composition of claim 127, wherein the enzyme comprises enzymes selected from the group consisting of the cysteine-protease, serine peptidase and metallo-protease families.

129. The composition of claim 128, wherein the cysteine-proteases are selected from the group consisting of Cathepsins B, H, J, L, N, S, T and C (dipeptidyl-peptidase-

l), Interleukine Converter Enzyme (ICE), neutral proteases activated by calcium, Calpaine I and II, viral cysteine-proteases, such as cardiovirus endopeptidase, adenovirus endopeptidase and aphthovirus endopeptidase, and essential proteases for the life cycle of parasites such as proteases from *Plasmodium*, *Entamoebas*, *Onchoceras*, *Leishmanias*, *Haemonchus*, *Dictyostelium*, *Therilerium*, *Schistosoma* and *Tripanosoma* species.

130. The composition of claim 129, wherein the enzyme is Cathepsin B, Cruzaine or Interleukine-1β Converter Enzyme.

131. The composition of claim 128, wherein serine peptidases are selected from the group consisting of dipeptidyl-peptidase IV, acylaminacyl-peptidase, oligopeptidase B and prolyl-oligopeptidase.

132. The composition of claim 128, wherein the enzyme is Cathepsin D.

133. The composition of claim 128, wherein metallo-proteases are selected from the group consisting of angiotensin converting enzyme, collagenases, stromelisines, membrane type metallo-protease and genatinases.

134. The composition of claim 128, wherein the compound is used to treat disorders and diseases linked to proteins and enzymes.

135. The composition of claim 134, wherein the diseases comprise diseases caused by tissue degradation such as arthritis, muscle distrophy, tumor invasion, glomerulonephrithis, bone infections by parasites, parasitomies, periodontal diseases and tumor metastasis; heart diseases involving the degradation of atrial natriuretic factor; inflammatory diseases, such as e. g. bronchitis, arthritis rheumatoid,

osteoporosis, acute pancreatitis and cancer progressions; disorders such as amnesia, control of depression and blood pressure; diabetes, trypanosomiasis, Chagas disease, food disorders, bullimia nervosa and anorexia; alcoholism, diseases related to the production of cytokines and cytokine receptors, such as interleukine-6 (IL-6), tumor necrosis factor alpha (TNF-alpha), interferon-gamma (INFN-gamma), IL-1 antatonist receptor (IL-1 RA), IL-10 and growth stimulation factor for granulocyte-macrophage colonies (GM-CSF), psychological stress, combat against infections caused by HIV virus (AIDS); inflammatory diseases of the Central Nervous System causing mieline degradation, including Multiple Sclerosis and autoimmune Encephalomielitis; cancer tumors, autoimmune diseases, tumors comprising breast, marrow, adenomas, thyroid, melanoma, gastric, bowel, gullet, thyroid tumors and neuroblastomas.

136. The composition of claim 135, wherein the diseases are ascitic or solid tumors, particularly breast, marrow, adenomas, thyroid, melanoma, gastric, bowel, gullet, thyroid tumors and neuroblastomas.

137. The composition of claim 114, wherein the composition inhibits young bone marrow cells from entering cell division (S stage).

138. The composition of claim 114, wherein the composition is antiangiogenic.

139. The composition of claim 114, wherein the composition is antimetastatic.

140. The composition of claim 114, wherein the composition is used to complement radio therapy treatments.

141. The composition of claim 114, wherein the composition interacts with DNA.

142. The composition of claim 114, wherein the composition is immunomodulator.

143. The composition of claim 114, wherein the composition comprises the total volume of blood of the recipient and active agent under concentration of about 0.01 to 200 μM, particularly 0.1 to 50 μM, more particularly between 10 and 25 μM.

144. A dosage unit comprising at least one compound of claim 93 or one of its pharmaceutically acceptable salts or adducts.

145. A dosage unit comprising at least one composition of claim 114.

146. The dosage unit of claim 144, wherein the quantity of compound is enough to take a concentration from about to 0.01 to 200 μM, particularly 0.1 to 50 μM, more particularly from 10 to 25 μM of an active ingredient in the total volume of blood of the recipient.

147. The dosage unit of claim 144, wherein the dosage unit comprises solid and liquid forms.

148. The dosage unit of claim 147, which comprises dosage forms selected from the group consisting of capsules, tablets, powders, elixirs, syrups, emulsions, solutions, suspensions, mixtures and infusions.

149. The dosage unit of claim 144, wherein the formulations are scheduled or delayed release.

150. The dosage unit of claim 144, comprising at least one covering layer.

151. A method to inhibit the activity of proteins linked to disorders or diseases, the method comprising administering an efficient quantity of a compound of claim 93.

152. The method of claim 151, wherein the protein is an enzyme.

153. A method to treat disorders and diseases, the method comprising administering an efficient quantity of a compound of claim 93.

154. The method of treatment of claim 153, wherein the method is intended to treat disorders and diseases linked to protein or enzyme activity.

155. The method of claim 152, wherein the enzyme is selected from the group consisting of the cysteine-protease, serine peptidase and metallo-protease families.

156. The method of claim 155, wherein the cysteine-proteases are selected from the group consisting of Cathepsins B, H, J, L, N, S, T and C (dipeptidyl-peptidase-l), Interleukine Converter Enzyme (ICE), neutral proteases activated by calcium, Calpaine I and II, viral cysteine-proteases, such as cardiovirus endopeptidase, adenovirus endopeptidase and aphthovirus endopeptidase, and essential proteases for the life cycle of parasites such as proteases from *Plasmodium*, *Entamoebas*, *Onchoceras*, *Leishmanias*, *Haemonchus*, *Dictyostelium*, *Therilerium*, *Schistosoma* and *Tripanosoma* species.

157. The method of claim 156, wherein the enzyme is Cathepsin B, Cruzaine or Interleukine-1β Converter Enzyme.

158. The method of claim 155, wherein the serine peptidases are selected from

the group consisting of dipeptidyl-peptidase IV, acylaminacyl-peptidase, oligopeptidase B and prolyl-oligopeptidase.

159. The method of claim 158, wherein the enzyme is Cathepsin D.

160. The method of claim 155, wherein the metallo-proteases are selected from the group consisting of angiotensin converting enzyme, collagenases, stromelisines, membrane-type metallo-protease and genatinases.

161. The method of claim 154, wherein the diseases comprise diseases caused by tissue degradation such as arthritis, muscle distrophy, tumor invasion, glomerulonephrithis, bone infections by parasites, parasitomies, periodontal diseases and tumor metastasis; heart diseases involving the degradation of atrial natriuretic factor; inflammatory diseases, such as e. g. bronchitis, arthritis rheumatoid, osteoporosis, acute pancreatitis and cancer progressions; disorders such as amnesia, control of depression and blood pressure; diabetes, trypanosomiasis, Chagas disease, food disorders, bullimia nervosa and anorexia; alcoholism, diseases related to the production of cytokines and cytokine receptors, such as interleukine-6 (IL-6), tumor necrosis factor alpha (TNF-alpha), interferon-gamma (INFN-gamma), IL-1 antatonist receptor (IL-1 RA), IL-10 and growth stimulation factor for granulocyte-macrophage colonies (GM-CSF), psychological stress, combat against infections caused by HIV virus (AIDS); inflammatory diseases of the Central Nervous System causing mieline degradation, including Multiple Sclerosis and autoimmune Encephalomielitis; cancer tumors, autoimmune diseases, tumors comprising breast, marrow, adenomas, thyroid, melanoma, gastric, bowel, gullet, thyroid tumors and neuroblastomas.

162. The method of claim 161, wherein the diseases are ascitic or solid tumors, particularly breast, marrow, adenomas, thyroid, melanoma, gastric, bowel, gullet,

thyroid tumors and neuroblastomas.

163. The method of claim 151, wherein the method inhibits young bone marrow cells from entering cell division (S stage).

164. The method of claim 151, wherein the method is antiangiogenic.

165. The method of claim 151, wherein the method is antimetastatic.

166. The method of claims 151, wherein the method complements radio therapy treatments.

167. The method of claim 151, comprising the administration of active ingredient between about 0.0001 to about 500 mg/kg of body weight, with the particular dose being about 0.0001 to 100 mg/kg and, more particularly, between 0.0001 and about 30 mg/kg.

168. The method of claim 151, further comprising the administration of enough active ingredient to take the concentration from about 0.01 to 200 μM, particularly 0.1 to 50 μM, more particularly from 10 to 25 μM of the active ingredient in the total volume of blood of the recipient.

169. The method of claim 151, wherein the administration is made by means of dosage units wherein the quantity of compound is enough to take a concentration from about to 0.01 to 200 μM, particularly 0.1 to 50 μM, more particularly from 10 to 25 μM of an active ingredient in the total volume of blood of the recipient.

170. The method of claim 151, wherein the administration is continuous, non continuous or cyclic.

171. A method to modulate the immunological system, comprising administering an efficient quantity of a compound of claim 93.

172. A use of the compound of claim 93 for the preparation of a composition.

173. The use of claim 172 for the manufacture of a medicine to inhibit the activity of proteins and enzymes.

174. The use of a composition of claim 114 for the preparation of a medicine to inhibit the activity of proteins and enzymes.

175. The use of claim 173, wherein the enzymes are selected from the group consisting of the cysteine-protease, serine peptidase and metallo-protease families.

176. The use of claim 175, wherein the enzymes comprise Cathepsins B, H, J, L, N, S, T and C (dipeptidyl-peptidase-l), Interleukine Converter Enzyme (ICE), neutral proteases activated by calcium, Calpaine I and II, endopeptidases, viral cysteine-proteases, such as cardiovirus endopeptidase, adenovirus endopeptidase and aphthovirus endopeptidase, and essential proteases for the life cycle of parasites such as proteases from *Plasmodium*, *Entamoebas*, *Onchoceras*, *Leishmanias*, *Haemonchus*, *Dictyostelium*, *Therilerium*, *Schistosoma* and *Tripanosoma* species; Cathepsin D or Encephalinase, dipeptidyl-peptidase IV, acylaminacyl-peptidase and oligopeptidase B and prolyl-oligopeptidase; angiotensin converting enzyme, collagenases, stromelisines, membrane type metallo-protease and genatinases.

177. The use of claim 174, wherein the diseases comprise diseases caused by tissue degradation such as arthritis, muscle distrophy, tumor invasion, glomerulonephrithis, bone infections by parasites, parasitomies, periodontal diseases and tumor metastasis; heart diseases involving the degradation of atrial natriuretic factor; inflammatory diseases, such as e. g. bronchitis, arthritis rheumatoid, osteoporosis, acute pancreatitis and cancer progressions; disorders such as amnesia, control of depression and blood pressure; diabetes, trypanosomiasis, Chagas disease, food disorders, bullimia nervosa and anorexia; alcoholism, diseases related to the production of cytokines and cytokine receptors, such as interleukine-6 (IL-6), tumor necrosis factor alpha (TNF-alpha), interferon-gamma (INFN-gamma), IL-1 antatonist receptor (IL-1 RA), IL-10 and growth stimulation factor for granulocyte-macrophage colonies (GM-CSF), psychological stress, combat against infections caused by HIV virus (AIDS); inflammatory diseases of the Central Nervous System causing mieline degradation, including Multiple Sclerosis and autoimmune Encephalomielitis; cancer tumors, autoimmune diseases, tumors comprising ascitic or solid, breast, marrow, adenomas, thyroid, melanoma, gastric, bowel, gullet, thyroid tumors and neuroblastomas.

178. The use of claim 172 for the manufacture of a medicine to treat disorders and diseases linked to the protein or enzyme activity.

179. The use of claim 172, to inhibit young bone marrow cells from entering cell division (S stage).

180. The use of claim 172, wherein the use is antiangiogenic.

181. The use of claim 172, wherein the use is antimetastatic.

182. The use of claim 172, wherein the use complements radio therapy treatments.

183. The use of claim 172, wherein the use interacts with DNA.

184. The use of claim 172, wherein the use is immunomodulator.